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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of

Amendment of the Commission's  
Rules and Regulations Concerning  
Shared Use of 150 MHz and 460  
MHz Paging Frequencies

TO: The Commission

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

PETITION FOR RULE MAKING  
OF THE  
ASSOCIATION FOR PRIVATE CARRIER PAGING SECTION OF  
THE NATIONAL ASSOCIATION OF BUSINESS  
AND EDUCATIONAL RADIO, INC.

The Association for Private Carrier Paging Section of the National Association of Business and Educational Radio, Inc. ("APCP") respectfully submits pursuant to Section 1.401 of the Commission's rules, 47 C.F.R., Section 1.401, a Petition for Rule Making which seeks to amend the Commission's rules to provide interference protection to promote and to preserve the efficient operation of private carrier paging systems in the 150 MHz band and the 460 MHz band. In support thereof, the following is shown:

I. BACKGROUND

A. The Association for Private Carrier Paging Section of NABER.

In 1989, NABER established the Association for Private Carrier Paging ("APCP"). Since that time, the Association has grown to include in its membership over two hundred (200) paging companies. This group has been actively involved in a variety of Commission proceedings including the filing of a petition for rule making which was the basis of the Commission's recent Report and Order in PR Docket 93-35 pertaining to amendment of the

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Commission's rules to provide channel exclusivity to qualified private paging systems at 929-930 MHz.<sup>1</sup>

APCP is comprised of local, regional and national private carrier paging licensees who operate on the paging only frequencies in the 150 MHz, 460 MHz and 900 MHz bands. On several occasions, the APCP has formulated committees of its members which have met with Commission officials to discuss various issues of importance to the private carrier paging industry. Most recently, the APCP has established an Interference Task Force to investigate in depth issues pertaining to private carrier paging services in the 150 MHz and 460 MHz bands involving interference problems and proposals to preserve and promote the efficient operation of the PCP frequencies below 900 MHz. The work of the Interference Task Force has now resulted in the APCP's filing of this Petition with the Commission.<sup>2</sup>

**B. Current Utilization of the Paging Only Frequencies.**

There are currently three (3) bands in which there are paging only frequencies: 150 MHz, 460 MHz and 929 MHz. In the 150 MHz band, there are two frequencies which are suitable for private carrier paging - 152.480 MHz and 157.740 MHz. The two remaining frequencies in the band (154.625 MHz and 158.460) have significant

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<sup>1</sup> In the matter of Amendment of the Commission's Rules to Provide Channel Exclusivity to Qualified Private Paging Systems at 929-930 MHz, PR Docket No. 93-30.

<sup>2</sup> The APCP Co-Channel Interference Task Force is comprised of representation from the following companies: Network USA, Celpage, Message Center Beepers, Arch Communications, Morris Communications and Awesome Paging.

output power restrictions which severely limit the coverage of those systems on the two frequencies. Because PCP systems generally require a wide-area of operation to operate effectively, 154.625 MHz and 158.460 MHz are not desirable frequencies for PCP operation and most applicants request 152.480 MHz or 157.740 MHz.<sup>3</sup> In the 460 MHz band, there are eight (8) frequencies that are suitable for PCP systems. In the 929 MHz band there are a total of forty (40) frequencies available for paging use.

Since 1982 and principally as a result of the Commission's action in PR Docket 83-737 (wherein the Commission clarified its private carrier rules), the number of new PCP systems has continued to rise dramatically. In this respect, PCP systems have been extremely successful and, in the major urban areas, this success has resulted in significant crowding and congestion on the 150 MHz and 460 MHz paging only frequencies. To date, hundreds of millions of dollars have been spent by private carrier paging operations in developing paging systems in the 150 MHz and 460 MHz bands which serve thousands of customers.

In April, 1992, APCP filed a Petition for Rule Making (RM-7986) seeking to have the Commission amend its rules governing private carrier paging systems at 929-930 MHz and to adopt a rule-making to grant channel exclusivity to qualified local, regional

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<sup>3</sup> APCP is therefore only including the 152.480 and 157.740 MHz bands and seven of the eight 460 MHz frequencies for inclusion in the rules being proposed in this Petition. It being proposed that 465.00 MHz be retained as a shared frequency.

and national paging systems.<sup>4</sup> In its Petition, APCP at that time determined that it was easier to address the issue of exclusivity for the first time in the 900 MHz PCP channels given the total number of channels available in that frequency band and the less congested status of such frequencies.

The Commission adopted a Notice of Proposed Rule Making, PR Docket No. 93-35 proposing to implement exclusive frequency assignments for qualified local, regional and nationwide 900 MHz private paging systems in response to the APCP Petition. On October 21, 1993, the Commission adopted a Report and Order amending its rules to grant channel exclusivity on 35 of the 40 private carrier paging channels at 929-930 MHz, with five channels to continue to be assigned on a non-exclusive basis. The rules adopted provided that for an applicant to qualify for exclusivity, licensees are required to construct their systems within eight (8) months of licensing and must have a minimum number of transmitters constructed (six or more) depending upon whether the systems are seeking local, regional or national use. The Report and Order also provided for construction under an extended implementation schedule or "slow growth" basis under certain circumstances. The Commission's Report and Order adopted in substantial part the proposal originally submitted by APCP.<sup>5</sup>

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<sup>4</sup> PR Docket 93-35, 8 FCC Rcd 2227 (1993).

<sup>5</sup> Although APCP on the whole enthusiastically supported the Commission's decision adopted in the Report and Order it has sought Partial Reconsideration or clarification of three issues. Those issues are: (i) the use of slow growth construction should be extended to include incumbent licensees; (ii) the geographic limits

## **II. NEED FOR INTERFERENCE PROTECTION FOR 150 MHz AND 460 MHz OF PAGING SYSTEMS**

As fully recognized by the Commission, as paging channels are occupied by an increasing number of competing providers, the sharing of frequencies, although technically feasible, negatively impacts an operators' efficient use of such channels.<sup>6</sup> Further, as shared use of channels increases, operators are discouraged from implementing more efficient technologies and expending additional capital knowing that they may not be operating free from interference from co-channel users. Hence, this frequency sharing often inhibits the development of wide-area paging systems that employ high-speed state of the art spectrally efficient technologies. Not surprisingly, as the demand for paging channels has accelerated, the difficulties of sharing have increased and the number of cases in which the frequency coordinator and the Commission have been faced with objections and disputes has risen dramatically.<sup>7</sup> Thus it is clear that the continued sharing of the private carrier paging frequencies at 150 MHz and at 460 MHz will

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of regional PCP systems should be defined by state borders rather than by the location of individual transmitter sites; and (iii) the paging systems operation with a maximum ERP of 3500 watts should be permitted for regional paging systems. See, Petition For Reconsideration and Clarification of the Association For Private Carrier Paging Section dated December 27, 1993.

<sup>6</sup> PR Docket No. 93-35 at Paragraph 15.

<sup>7</sup> By way of examples, several cases involving the licensing of additional co-channel applicants to already used frequencies have involved the following parties: Celpage, TPI Transmission Service, RAM Technologies, Capitol Radiotelephone, AACS, Parkway Paging, AACS, Dial-a-Page, Network USA, Crystal Clear Communications, WDS Communications, Network USA, Inabnet Communications, Arch Communications and Message Center Beepers.

only lead to greater incidences of interference with the resultant loss of stability in the market place to both operators and customers on such systems. Finally, even if co-channel licensees agree to cooperate on an intensively shared channel, the technical and economic feasibility of actually coordinating the use of dissimilar equipment and paging formats; the coordination of synchronous protocols, the use of satellite links and the use of multiple base stations make the task impractical, if not impossible.

In PR Docket 93-35, the Commission decided not to combine its proposal for exclusivity in the 900 MHz band with a similar proposal for the lower band PCP channels.<sup>8</sup> In addressing the issue, the Commission stated that "[t]he degree of existing congestion in the 150 MHz and 460 MHz bands raises obstacles to implementing exclusivity that are not present at 900 MHz. Moreover, we believe that many licensees will continue to prefer the lower band channels even on a shared basis because of their lower power requirements and equipment costs."<sup>9</sup> The Commission did, however, conclude that it would still be open to further comment and examination of this issue.

The continued explosion and demand for telecommunication services coupled with the willingness of new and existing private carriers to invest substantial capital in paging systems in the 150 MHz and 460 MHz bands have now created a situation in which PCP

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<sup>8</sup> PR Docket 93-35 at Paragraph 38.

<sup>9</sup> PR Docket 93-35 at Paragraph 39.

channels operating in most urban markets at 152.480 MHz and 154.740 MHz as well as on the eight (8) paging only frequencies in the 460 MHz bands are so intensely used and shared that any further sharing without the adoption by the Commission of channel interference and protection guidelines will result in an increase of interference and an unacceptable degradation of service. In order to protect against such a result, existing licensees and new applicants will be engaged in an ever growing proliferation of disputes involving channel occupancy and interference complaints. In sum, the degree of intense utilization of these frequencies now mandates immediate relief in order to protect a highly competitive industry as well as preserve continuation of the service benefits being provided by such paging systems to the public.

The Commission is charged with protecting licensees from harmful interference. Although under current Commission Rules licensees on shared frequencies are required to cooperate to resolve interference problems, the experience of APCP members has been that as increased use and sharing of the 150 MHz and 460 MHz PCP channels has continued, a case by case approach to resolve current and future interference issues has now become unacceptable. This approach is resulting in an increase of disputes amongst existing and new operators. These disputes have involved the carriers, the coordinators and the Commission in a spiral of pleadings charging and counter-charging by each of the parties as to what is or is not an acceptable grade of service - all in an effort to determine efficient utilization of a shared channel. It

is therefore paramount for the Commission to adopt rules which protect licensees who have built and invested hundreds of millions of dollars on shared PCP systems and to provide for channel protection through a determination that there already exists sufficient utilization of a particular frequency in a defined area so that a new paging applicant will not be licensed on that already used frequency and be required to seek another less congested channel.

In the Refarming Docket<sup>10</sup>, the Commission has proposed the utilization of an Exclusive Use Overlay ("EUO") on shared frequencies below 800 MHz in order to allow for implementation of channel exclusivity. This EUO concept was based upon the development and implementation of narrow band technology to previously occupied and shared operating channels. In the case of paging, the Commission has recognized in the Refarming Docket that paging already operates at a high level of efficiency and therefore its narrow band conversion was not required. Nonetheless, a review of the Refarming Docket makes it clear that the implementation of the Exclusive Use Overlay concept on paging frequencies could still apply. The APCP believes that, rather than wait the time frame set forth in PR Docket 92-235 principally focused on the refarming of two-way shared channels below 800 MHz, that the Commission now act

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<sup>10</sup> In the Matter of: Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Their PR Docket No. 92-235 (hereinafter referred to as the "Refarming Docket").



in order to protect paging licensees and their customers operating on PCP systems in the 150 MHz and 460 MHz bands.

Finally, the Commission in its recently adopted Report and Order in PR Docket No. 93-35 has recognized the ability of qualified 900 MHz paging carriers to earn channel exclusivity. This was considered important at 900 MHz in order to encourage development of wide-area technological advanced systems. Paging licensees currently operating systems on the shared frequencies at 150 MHz and 460 MHz also need Commission action in order to continue to preserve their ability to provide competitive, quality and technologically advanced paging systems. Adoption of the rules proposed in this Petition will allow an enhanced sharing of channels by qualified licensees which will clearly serve the public interest.

### **III. RULE AMENDMENTS REQUESTED**

APCP recommends the immediate adoption of two separate rule changes. The first is that the Commission provide for protection to already existing paging licensees to prevent a sufficiently utilized frequency from being further licensed to new applicants. Although this, in part, is a type of "earned exclusivity" similar to the premise underlying the adoption of the rules in PR Docket No. 93-35, its immediate result when applied to the PCP channels below 900 MHz will be to recognize the already extensive shared use of the paging only frequencies, 152.480 and 157.480 MHz and in the 460 MHz band and to permit such existing operators to employ more

spectrally efficient technology in order to maximize the use of their channels.

The continued prospect that new paging applicants may be added to an already heavily shared PCP channel in a market creates a clear disincentive for existing paging carriers to utilize more efficient technology. Specifically, an operator who uses a digital paging system may find its available air time destroyed by a new licensee who chooses to use analog voice paging on the same channel. Accordingly, the Commission should view this Petition as a necessary step to help alleviate a growing problem on the shared paging channels at 152.480, 157.740 and at 460 MHz. The members of APCP utilizing such frequencies are prepared to work to continue to resolve current sharing problems with existing co-channel licensees. However, they need the Commission's assistance in adopting a rule change which will permit them to continue to make substantial investment in wide-area paging systems and to provide a competitive paging system to 900 MHz paging carriers.<sup>11</sup>

It is APCP's goal in this proceeding to prevent the continued deleterious interference and case by case difficulties which have plagued the paging only channels in the 150 MHz and 460 MHz frequency bands. Accordingly, APCP requests that the Commission amend its rules to provide for the recognition of channel protection for those PCP licensees operating on 152.480 MHz and 154.740 MHz as well as those PCP licensees on seven (7) of the

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<sup>11</sup> Cite Report and Order.

eight (8) 460 MHz frequencies who satisfy certain transmitter construction criteria.

APCP requests that the Commission recognize for those paging systems on 152.480, 157.740 and on seven (7) of the eight (8) paging only 460 MHz channels operating on a local basis and regional basis that a paging channel is sufficiently utilized and no further licensees will be assigned to it when a minimum number of transmitters have been constructed and are in operation. Similar to the rules adopted in PR Docket No. 93-35, APCP believes that the same minimum number of transmitter construction requirements for local and regional exclusivity should be applied to the frequencies below 900 MHz. The minimum number of contiguously constructed transmitters for determining local and regional exclusivity should recognize the shared use of these channels by a significant number of paging operators already providing service to the public. When coupled with the second rule change requested in this Petition, the two rules would protect existing systems from interference and allow the implementation of spectrally efficient technologies.

APCP supports the minimum number for local systems of at least six (6) contiguous transmitters to be constructed except that in New York, Los Angeles and Chicago eighteen (18) transmitters be required. A transmitter will be counted towards the minimum only if it is within at least 37.5 miles of another transmitter in the system and provided that it is not co-located with another

transmitter being counted toward the minimum on the same frequency.<sup>12</sup>

For regional systems, a licensee would be required to have constructed at least 70 or more transmitters, located in no more than twelve (12) adjacent states. In each of the top thirty markets, no transmitter would be counted as part of a regional system unless it also met the local minimum construction requirements. Further, unlike its Petition for Reconsideration of the Report and Order in PR Docket No. 93-35, APCP suggests that in the frequencies below 900 MHz that a regional PCP system be defined by the location of individual transmitter sites and by its contiguous constructed transmitter sites. This change from APCP's position for frequencies above 900 MHz and the rules adopted in 93-35 would recognize the already extensive use of the 150 MHz and 460 MHz paging frequencies.

Further, because of the already significant shared use of the paging frequencies at 150 MHz and 460 MHz, APCP does not believe that nationwide protection is appropriate. Although certain of the APCP members operate or intend to operate on a nationwide or multi-regional basis, the consensus of the Section was that such channel protection was not necessary.

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<sup>12</sup> APCP has suggested construction contours using 37.5 miles as compared to 25 miles adopted in the 900 PCP proceeding due to the different prorogation contours found in the 150 MHz and 460 MHz bands. As this proceeding develops and interested parties comment, there may be the need to make further refinements to take into account the operational differences found in the 150 MHz and 460 MHz bands.

For purposes of construction, the APCP would support utilization of the standard adopted in the 900 MHz proceeding, to the effect that no transmitter may be counted unless it is capable of at least 100 watts output power, has simulcast compatibility and is to be operated as a part of the paging system for which channel exclusivity is sought.<sup>13</sup>

As a second part to this Petition, the APCP believes that the Commission should immediately implement a rule which would protect existing and subsequently granted co-channel licensees which would give them a clear direction as to operating in a co-channel environment. Specifically, the APCP Interference Task Force has adopted a Report to implement suggested guidelines in order to prevent simultaneous seizure of a shared channel ("key-up overlap") by operators who are co-channel on a frequency within the same service area. Simultaneous seizure of a shared channel occurs when any two or more unrelated co-channel transmitters within the same service area transmit their RF energy simultaneously during any given moment in time.

The type of interference which the APCP is primarily concerned about is interference which is completely controllable and has not been addressed adequately by the FCC. This interference is caused by the licensing of more than one transmitter to different co-channel licensees on the same frequency in the same service area without adequate rules preventing simultaneous key-up overlap of the transmitters. Because of the many different types of paging

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<sup>13</sup> PR Docket 93-35; Section 90.495(4).

terminals, transmitter controllers and set-up conditions, to simply state that there must be a direct connection between the paging terminals does not in and of itself guarantee adequate results. Accordingly, the APCP Interference Task Force has specifically recommended that any co-channel transmitter within a defined service area must be equipped with the properly configured controllers that are capable of exchanging pre key-up ("PTT"), or request to transmit ("RTT") key-ups and clear to transmit ("CTT") information for the purpose of placing such transmitter in a busy wait state in order to prevent key-up overlap. If a request to transmit information is not exchanged as well as the other two signals, maximum co-channel efficiency cannot be achieved. In the case of three or more licensees in a service area, it will also be necessary to have a common controller which will add the element of time sharing in order to provide an equitable division of air time to each licensee. If a transmitter has been allocated a clear to transmit time slot and has no traffic waiting, the controller must also have the ability to assign the next time slot. No transmitter should be allowed to transmit longer at any one time without relinquishing the channel than is already set forth in the FCC rules.<sup>14</sup>

The Interference Task Force studied various technological guidelines which might set forth present technology available to accommodate the above problem. However, it concluded that rather

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<sup>14</sup> Any type of permitted means may be used to transfer the information between the transmitter controllers.

than submit the details of a particular technological solution, the Commission should mandate in its rules that simultaneously key-up overlap within a service area by co-channel PCP licensees is not acceptable and that co-channel licensees must undertake immediate steps to remedy such a situation. In mandating such a strict rule of this nature and enforcing it, the Commission will make clear that co-channel licensees must act to implement technological solutions to prevent interference. Such an approach should allow for additional developments in technology while also allowing those licensees who share a channel to take into account the availability of various solutions to channel utilization depending upon the degree of its use.

The APCP believes that both of the above rule changes are necessary. The adoption of earned exclusivity on the 150 MHz and 460 MHz PCP channels will provide a means of protection to PCP operators and their customers from further degradation of their service caused by the continued sharing by new applicants once a channel is determined to be exclusively used by existing licensees. As was the case for PCP operators at 900 MHz, this approach will also protect the continued operation of all existing licensees. The second proposed rule change requiring prevention of simultaneous key-up overlap within a service area by co-channel licensees will resolve growing interference issues between existing co-channel licensees in an already heavily congested frequency environment.

#### **IV. THERE ARE ADEQUATE ALTERNATIVES FOR NEW PAGING ENTRANTS**

In its Report and Order in the 900 MHz exclusivity proceeding, the Commission has reserved five (5) full powered 900 MHz PCP systems for continued shared use. Given the heavy utilization in urban areas of the paging only frequencies at 150 MHz and 460 MHz, the APCP believes that new entrants should be encouraged to seek operation on the 900 MHz PCP frequencies designated for continued sharing and not subject to earned exclusivity.<sup>15</sup> Further, earned exclusivity is not being requested to include the two lower power 150 MHz paging channels and the 465.00 MHz channels. This should allow the continued operation by low power local operations on such frequencies. New entrants to paging will also have the opportunity to apply for shared use of any 900 MHz, 150 MHz or 460 MHz frequency which has not become exclusive in a particular area due to current operations by existing licensees.

Finally, new opportunities for paging must also be seen as including the possibility of offering competing paging services as part of an SMR System, on Advanced Messaging (narrowband PCS) frequencies or even on newly created PCS allocations. The point being that because the PCP frequencies at 150 MHz and 460 MHz are heavily shared and resolutions of interference problems amongst co-

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<sup>15</sup> The Commission may also want to mandate that new applicants on the five shared frequencies at 900 MHz not be permitted to employ analog voice technology so as to encourage use of more spectrally efficient technologies prior to the substantial construction of less efficient systems on such channels.



channel licensees complex, the Commission should not "throw up its hands" and refuse to take steps to allow the continued operation of such channels without degradation of service to licensees and customers. Those operators who have built out systems and continue to operate on the 150 MHz and 460 MHz PCP frequencies have done so over a long period of time and, as their industries have matured and grown, they should be allowed the same degree of protection from interference as provided to other licensees of the Commission.

#### V. CONCLUSION


The continued growth and development of private paging carriers, both below and above 900 MHz has mandated that the Commission address a growing and difficult problem caused to PCP operators. It is not in the public interest for the Commission to avoid recognition of the need to allow interference free operation by licensees and their customers who operate or take service from paging systems on the 150 MHz and 460 MHz bands. Without such action, further sharing of such channels will result in a deleterious impact to both PCP operators and to the public. The Commission has adopted at 900 MHz, an acceptable industry recommendation for earned exclusivity. The APCP urges that the time has come for implementation of a rule change for those frequencies in the 150 MHz and 460 MHz bands to enhance channel utilization. In this respect, the Commission should recognize and protect from spectrum degradation already heavily built-out and operating local and regional PCP systems. Further, the Commission should promulgate a rule to prohibit simultaneous key-up overlap

on co-channel systems so that all existing PCP licensees operating on a shared basis within the same service area will be required to act in order to prevent such a problem from occurring. In such a way, the Commission will ensure the continued efficient, effective utilization of these frequencies and will encourage the continued growth and development of a highly competitive industry.

**WHEREFORE**, the Association for Private Carrier Paging Section of the National Association of Business and Educational Radio, Inc. respectfully requests that the Commission adopt a Notice of Proposed Rule Making and amend its rules consistent with this Petition.

Respectfully submitted,

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PAGING**

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